

**REMARKS**

The present amendments and remarks are in response to the Office Action of September 2, 2004. Claims 11 and 12 are currently pending, and new claims 24-26 have been added.

Reconsideration of the application is respectfully requested in view of the following responsive remarks. For the Examiner's convenience and reference, the Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

In the Office Action, the following rejections were made:

- (1) claims 11 and 12 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention; and
- (2) claim 11 was rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 5,990,202 (hereinafter "Nguyen"); and
- (3) claim 12 was rejected under 35 U.S.C. 102(b) or 35 U.S.C. or 103(a) as being anticipated by, or in the alternative, as obvious over U.S. Pat. No. 4,795,794 (hereinafter "Winnik").

**Rejection under 35 U.S.C. 112, second paragraph**

The Examiner has rejected claims 11 and 12 under 35 U.S.C. 112, second paragraph as being indefinite. Specifically, the Examiner correctly pointed out that claims 11 and 12 depended from cancelled claims 6 and 8, respectively. As such, claims 11 and 12 have been amended to independent form, and thus, no longer depend from cancelled claims 6 and 8. As the present application is a divisional application subject to an election/restriction requirement, and as claims 6 and 8 are not pending in the present application, this amendment was procedurally necessitated, and thus, is not a narrowing amendment. The Applicant respectfully submits that this rejection has been rendered moot, and requests that this rejection be withdrawn.

**Rejections under 35 U.S.C. 102(b) and 103(a)**

Before discussing the rejections under 35 U.S.C. 102(b), it is thought proper to briefly state what is required to sustain such a rejection. It is well settled that "[a] claim is anticipated only if each and every element as set forth in the claims is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil of California*, 814 F.2d 628, 2 U.S.P.Q. 2d 1051, 1053 (Fed. Cir. 1987). In order to establish anticipation under 35 U.S.C. §102, all elements of the claim must be found in a single reference. *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 231 U.S.P.Q. 81, 90 (Fed. Cir. 1986), *cert. denied* 107 S.Ct. 1606 (1987). In particular, as pointed out by the court in *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1981), *cert denied*, 469 U.S. 851 (1984), "anticipation requires that each and every element of the claimed invention be disclosed in a prior art reference." "The identical invention must be shown in as complete detail as is contained in the...claim." *Richardson v. Suzuki Motor Co.* 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989).

Additionally, before discussing the obviousness rejection herein, it is thought proper to briefly state what is required to sustain such a rejection. The issue under § 103 is whether the PTO has stated a case of *prima facie* obviousness. According to the MPEP § 2142, the Examiner has the burden and must establish a case of *prima facie* obviousness by showing some motivation in a prior art reference to modify that reference, or combine that reference with multiple references, to teach all the claim

limitations in the instant application. Applicants respectfully assert the Examiner has not satisfied the requirement for establishing a case of *prima facie* obviousness in this rejection.

#### Rejection over Nguyen

The Examiner has rejected claim 11 under 35 U.S.C. 102(b) as being anticipated by Nguyen. Nguyen discloses ink jet inks which include a vehicle and a colorant. The colorant is associated with a primer core/shell polymer to form a primer/colorant combination. Upon printing on a print medium, the primer/colorant combination becomes encapsulated by a durable core/shell polymer. The primer core/shell polymer serves to promote adhesion of the durable core/shell polymer to the colorant and to disperse the colorant in the ink. More specifically, Nguyen discloses several steps for preparing a primer core/shell polymer. According to Example 3, the steps employed include i) mixing a hydrophobic and a hydrophilic or highly polar monomer together ii) adding the mixture to a solution containing a chain transfer agent, surfactant and stabilizer to form a polymeric mixture; and iii) preparing a catalyst solution and adding the polymeric mixture to the catalyst solution. Regarding i), a hydrophilic or highly polar moiety must be present to form the durable core/shell polymer (Column 3, lines 54-56). Regarding ii), the surfactant promotes emulsification between the monomers in this invention by binding the hydrophobic monomer to one end of the surfactant and the hydrophilic or highly polar monomer to the opposing end, thus enabling the creation of a core/shell polymer. Thus, Nguyen teaches, as illustrated in the examples, a multi-step process to produce an ink composition that has a primer core/shell polymer.

Nothing in the Nguyen reference teaches or suggests preparing an ink composition through the use amphipathic polymeric particles and convertible moieties. Unlike the method and examples in Nguyen, the instantly claimed invention discloses a process for preparing an ink composition resulting in an ink composition that has different properties than that described in Nguyen. The process involves preparing amphipathic particles in a single batch, through mixing an aqueous carrier, monomers containing a hydrophobic moiety, an unsaturated monomer containing a convertible moiety in a hydrophobic form, and a surfactant. This results in the formation of an emulsion. As stated on page 6, lines 19-24, the

emulsion mixture has an acidic pH, and thus, the convertible monomers are in the hydrophobic form and can be converted to a hydrophilic form after the mixture's pH is adjusted to a basic range (pH > 7). Given the steps of the claimed invention and the conversion of the moiety which takes place after the polymerization, the composition does not form a primer core/shell polymer. In other words, as both of the monomer types include hydrophobic moieties when put together in the batch, the monomers will not become arranged such that a core/shell polymer would be formed. It is only after a more random polymerization that the convertible moiety is converted. Once the particulates are formed, this convertible feature does not generally alter the basic structure of the polymer, other than to modify the convertible moiety *per se*. Thus, the Nguyen reference does not disclose each and every element of the present claims and therefore fails to anticipate them.

Accordingly, the instantly claimed invention is not anticipated by the cited reference, as Nguyen lacks at least one element of the instantly claimed invention. Applicant submits that this rejection is improper, and respectfully requests that it be withdrawn.

#### Rejections over Winnik

The Examiner has also rejected claim 12 under 35 U.S.C. 102(b) as being anticipated by, or in the alternative, as obvious under 35 U.S.C. 103(a) over Winnik. Winnik discloses a process for affecting the preparation of color particles. More specifically, Winnik discloses a process for preparation of toner particles. As noted by the Examiner, the process encompasses dispersion polymerization processes where a monomer has a dye moiety permanently attached. The process also involves dissolving two monomers into a solvent, where one of the monomers has the dye moiety attached thereto, adding an initiator to the mixture, heating the mixture, and retrieving the product from the mixture. Thus, a surfactant is never used in the formation of the toner particles.

In contrast, the presently claimed invention is drawn to an ink composition having a vehicle, a first surfactant, and an amphipathic polymer prepared from a monomer containing a convertible moiety, a polymerizable dye monomer, and a second surfactant. The ink composition is produced by an emulsion process in the presence of the surfactant. The second surfactant (the surfactant used in preparing

the amphipathic particles) plays a vital role in carrying out the process to obtain the claimed product. This second surfactant is also used to reduce the interfacial tension between monomers and the aqueous vehicle. A process that is devoid of the use of a surfactant in preparing the polymeric particles is generally known as a dispersion polymerization which can not produce the same product as claimed in claim 12.

The Examiner has indicated that the Winnik reference utilizes a dispersion polymerization process and the presently claimed invention discloses an emulsion polymerization process. Furthermore, Examiner alleges the dispersion polymerization process focuses on the product and the emulsion polymerization process focuses on the starting mixture, and the two processes produce the same resultant product. However, Applicant respectfully disagrees with the Examiner. An emulsion polymerization process involves the emulsification of monomer droplets within a continuous aqueous phase, and a surfactant is utilized to stabilize the process. For example, a micelle can be formed next to the stabilized monomer droplets, or can surround the monomer droplets. When the water soluble initiator is added to initiate free-radical polymerization, the polymerization process takes place at the monomer micelles site, where the monomers are converted to latex particles. This results in a reaction medium consisting of micrometer polymer particles. The final product consists of a colloidal dispersion of polymer particles in water.

Conversely, with dispersion polymerization, the monomers dissolve in the aqueous medium but the newly formed polymer does not. Meaning that the particles are formed early in the polymerization process. The particles are the center of polymerization, leading to spherical particles. Emulsion polymerization differs from dispersion polymerization in that i) smaller particle sizes are more readily achievable with emulsion polymerization, ii) the starting material is different, and iii) the applied stabilizing agents (surfactants) are typically present in emulsion polymerization and not in dispersion polymerization. These three different starting factors influence the product produced thereby. For example, though there is some overlap in size range in Winnik compared to the claimed invention, the presence of the surfactant would still have an affect on other physical characteristics of the particles, e.g., polydispersity, particle shape, etc. Additionally, Winnik does not teach of the use of these particulates in an ink composition, and thus, the claimed ink composition is

distinguishable from this perspective as well. Reconsideration on these grounds is respectfully requested.

Applicant further contends that claim 12 is not *prima facie* obvious in view of the cited Winnik reference. Winnik teaches producing a polymer composition for application in a toner composition by means of a dispersion polymerization process. Furthermore, the Winnik reference produces compositions of varying size and shape compared to the present invention, as described in the response to the 35 U.S.C. 102 rejection above. In addition, Winnik is devoid of teaching that the claimed ink composition can be produced by the use of a surfactant. Surfactants are a very specialized type of composition used in emulsion polymerization process. Thus, if there is no suggestion in Winnik that there is a desire for producing the ink composition by means a surfactant or an emulsion polymerization process, how can there be a motivation to modify this reference to achieve the instantly claimed invention? Actually, Winnik is clear in its objectives to produce a toner particle that is produced by a dispersion polymerization process and avoids emulsion processes altogether. Since, Winnik is devoid of such teachings; one of ordinary skill in the art would not be motivated to modify the reference to arrive at the presently claimed invention. Therefore, Applicant respectfully requests that this rejection be withdrawn as well.

**CONCLUSION**

In view of the foregoing, Applicant believes that claims 11-12 present allowable subject matter and allowance is respectfully requested. If any impediment to the allowance of these claims remains after consideration of the above remarks, and such impediment could be removed during a telephone interview, the Examiner is invited to telephone Susan E. Heminger at (650) 236-2738 so that such issues may be resolved as expeditiously as possible.

Please charge any additional fees except for Issue Fee or credit any overpayment to Deposit Account No. 08-2025.

Dated this 2<sup>nd</sup> day of December, 2004.

Respectfully submitted,



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